

**WHAT IS CLAIMED IS:**

1. A improved method of correcting pixel by pixel variations in a display, including the steps of creating a defect map of pixel intensity offsets for the display; correcting an input signal according to the defect map; and displaying the corrected input signal on the display, wherein the improvement comprises:

creating the offset defect map by:

- a) modulating a pixel in the display at a predetermined rate at a predetermined intensity;
- b) sensing the display with a photosensor to generate a sensed signal;
- c) demodulating the sensed signal with a synchronous demodulator at the predetermined rate to produce a demodulated sensed signal representing a sensed intensity; and
- d) employing the sensed intensity and the predetermined intensity to generate a correction offset.

2. The method claimed in claim 1, wherein the defect map further includes pixel gain variations and the method includes the step of correcting the input signal for pixel gain variations, the improvement further comprising:

- a) modulating the pixels at a plurality of predetermined intensity levels, and sensing and demodulating the sensed signals to produce a plurality of demodulated signals; and
- b) employing the plurality of sensed signals to generate a gain correction.

3. The method claimed in claim 1, wherein the display is a color display device and the method is applied to each color channel of the display device.

4. The method claimed in claim 1, , wherein a cluster of pixels is modulated to generate a correction offset for the cluster.

5. A display device, comprising:

- a) a light source;
- b) a light modulator;
- c) drive electronics for driving the light modulator with an input signal;
- d) correction electronics for correcting the input signal on a pixel by pixel basis for intensity offset;
- e) a memory for storing a defect map of pixel intensity offsets for the display;
- f) means for modulating a pixel in the display at a predetermined rate at a predetermined intensity;
- g) a photosensor for sensing the display to generate a sensed signal;
- h) a synchronous demodulator for demodulating the sensed signal at the predetermined rate to produce a demodulated sensed signal representing a sensed intensity; and
- i) means employing the sensed intensity and the predetermined intensity for generating the intensity offset.

6. The display claimed in claim 5, wherein the correction electronics further includes means for correcting the input signal on a pixel by pixel basis for gain, and further comprising means for modulating the pixel at a plurality of predetermined intensities at the predetermined frequency and means for generating a gain correction.

7. The display claimed in claim 5, wherein the means for modulating modulates a cluster of pixels in the display.